

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

ROUND ROCK RESEARCH, LLC,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Civ. No. 12-569-SLR
	)	
SANDISK CORPORATION,	)	
	)	
Defendant.	)	

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**MEMORANDUM OPINION**

Dated: February 4, 2015  
Wilmington, Delaware

  
ROBINSON, District Judge

## I. INTRODUCTION

On May 3, 2012, plaintiff Round Rock Research, LLC ("Round Rock") instituted suit against defendant SanDisk Corporation ("SanDisk"), alleging infringement of eleven patents, of which five are the subject of the current litigation:<sup>1</sup> U.S. Patent Nos. 5,615,159 ("the '159 patent"),<sup>2</sup> 6,728,798 ("the '798 patent"), 6,948,041 ("the '041 patent"), 7,336,531 ("the '531 patent"), and 8,060,719 ("the '719 patent").<sup>3</sup> (D.I. 1) Round Rock filed an amended complaint on May 14, 2012. (D.I. 5) On July 9, 2012, SanDisk answered and asserted various affirmative defenses, including non-infringement and patent invalidity. (D.I. 8) SanDisk also asserted counterclaims for

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<sup>1</sup>The parties stipulated to the dismissal of one of the remaining six patents, and the other five will be litigated separately. (D.I. 15)

<sup>2</sup>In *SanDisk v. Round Rock Research LLC*, 2014 WL 2700583, at \*5 (N.D. Cal. June 13, 2014) ("the California case"), the District Court for the Northern District of California addressed whether "the doctrine of patent exhaustion bars Round Rock's claims for infringement" against SanDisk under the same license that governs the '531 patent. The court there found that patent exhaustion applied to both accused memory chips and accused "controllers," which are "custom-designed" by SanDisk. *Id.* The court held that there is "no indication SanDisk's 'custom design' transforms its controllers into something meaningfully distinguishable from 'the application of common processes or the addition of standard parts [to the memory chips].'" *Id.* Round Rock presented precisely this aspect of the district court's decision to the Federal Circuit as an issue on appeal. (Case No. 14-1678, D.I. 24 at 31 (Fed. Cir. 2014)) ("the district court concluded that the doctrine of patent exhaustion applied to both the controller chip based infringement claims and the flash memory chip based infringement claims. . . This is legally incorrect and unsupported by the evidence of record.").

In the present case, Round Rock accuses the same memories of infringement as were at issue in the California case, leaving only the issue of whether the accused memories substantially embody the asserted claims of the '531 patent. For the sake of judicial economy, the court grants a stay of all litigation relating to the '531 patent pending the outcome of the appeal to the Federal Circuit.

<sup>3</sup>Of the five patents currently at issue, only two – the '719 and '531 patents – are discussed in this memorandum as the court set staggered schedules for expert discovery, summary judgment, and trial for the '159, '798 and '041 patents.

non-infringement and invalidity. *Id.* The parties submitted their competing claim construction briefs and, on July 21, 2014, the court issued a memorandum order with its claim construction. (D.I. 172) On December 17, 2014, the court issued a memorandum opinion and order regarding summary judgment of the '150, '798 and '041 patents. (D.I. 324; D.I. 325)

Round Rock is a Delaware limited liability company with its principal place of business in Mount Kisco, New York. SanDisk is a corporation organized and existing under the laws of Delaware, with its principal place of business in Milpitas, California.

Presently before the court are: (1) SanDisk's motion for summary judgment of invalidity of the '531 and '719 patents (D.I. 285); (2) SanDisk's motion for summary judgment of non-infringement of the '531 patent and partial summary judgment of non-infringement of the '719 patent (D.I. 283); and Round Rock's motion for partial summary judgment of no anticipation (D.I. 280). The court has jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

## **II. STANDARDS OF REVIEW**

### **A. Summary Judgment**

"The court shall grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). The moving party bears the burden of demonstrating the absence of a genuine issue of material fact. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 415 U.S. 574, 586 n.10 (1986). A party asserting that a fact cannot be—or, alternatively, is—genuinely disputed must support the assertion either

by citing to "particular parts of materials in the record, including depositions, documents, electronically stored information, affidavits or declarations, stipulations (including those made for the purposes of the motions only), admissions, interrogatory answers, or other materials," or by "showing that the materials cited do not establish the absence or presence of a genuine dispute, or that an adverse party cannot produce admissible evidence to support the fact." Fed. R. Civ. P. 56(c)(1)(A) & (B). If the moving party has carried its burden, the nonmovant must then "come forward with specific facts showing that there is a genuine issue for trial." *Matsushita*, 415 U.S. at 587 (internal quotation marks omitted). The court will "draw all reasonable inferences in favor of the nonmoving party, and it may not make credibility determinations or weigh the evidence." *Reeves v. Sanderson Plumbing Prods., Inc.*, 530 U.S. 133, 150 (2000).

To defeat a motion for summary judgment, the non-moving party must "do more than simply show that there is some metaphysical doubt as to the material facts." *Matsushita*, 475 U.S. at 586-87; see also *Podohnik v. U.S. Postal Service*, 409 F.3d 584, 594 (3d Cir. 2005) (stating party opposing summary judgment "must present more than just bare assertions, conclusory allegations or suspicions to show the existence of a genuine issue") (internal quotation marks omitted). Although the "mere existence of some alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment," a factual dispute is genuine where "the evidence is such that a reasonable jury could return a verdict for the nonmoving party." *Anderson v. Liberty Lobby, Inc.*, 411 U.S. 242, 247-48 (1986). "If the evidence is merely colorable, or is not significantly probative, summary judgment may be granted." *Id.* at 249-50 (internal citations omitted); see also *Celotex Corp. v. Catrett*, 411 U.S.

317, 322 (1986) (stating entry of summary judgment is mandated "against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial").

## **B. Infringement**

A patent is infringed when a person "without authority makes, uses or sells any patented invention, within the United States . . . during the term of the patent." 35 U.S.C. § 271(a). A two-step analysis is employed in making an infringement determination. See *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995). First, the court must construe the asserted claims to ascertain their meaning and scope. See *id.* Construction of the claims is a question of law subject to de novo review. See *Cybor Corp. v. FAS Techs.*, 138 F.3d 1448, 1454 (Fed. Cir. 1998). The trier of fact must then compare the properly construed claims with the accused infringing product. See *Markman*, 52 F.3d at 976. This second step is a question of fact. See *Bai v. L & L Wings, Inc.*, 160 F.3d 1350, 1353 (Fed. Cir. 1998).

"Direct infringement requires a party to perform each and every step or element of a claimed method or product." *BMC Res., Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1378 (Fed. Cir. 2007), *overruled on other grounds by* 692 F.3d 1301 (Fed. Cir. 2012). "If any claim limitation is absent from the accused device, there is no literal infringement as a matter of law." *Bayer AG v. Elan Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000). If an accused product does not infringe an independent claim, it also does not infringe any claim depending thereon. See *Wahpeton Canvas Co. v. Frontier, Inc.*, 870 F.2d 1546, 1553 (Fed. Cir. 1989). However, "[o]ne may infringe an

independent claim and not infringe a claim dependent on that claim." *Monsanto Co. v. Syngenta Seeds, Inc.*, 503 F.3d 1352, 1359 (Fed. Cir. 2007) (quoting *Wahpeton Canvas*, 870 F.2d at 1552) (internal quotations omitted). A product that does not literally infringe a patent claim may still infringe under the doctrine of equivalents if the differences between an individual limitation of the claimed invention and an element of the accused product are insubstantial. See *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 24 (1997). The patent owner has the burden of proving infringement and must meet its burden by a preponderance of the evidence. See *SmithKline Diagnostics, Inc. v. Helena Lab. Corp.*, 859 F.2d 878, 889 (Fed. Cir. 1988) (citations omitted).

When an accused infringer moves for summary judgment of non-infringement, such relief may be granted only if one or more limitations of the claim in question does not read on an element of the accused product, either literally or under the doctrine of equivalents. See *Chimie v. PPG Indus., Inc.*, 402 F.3d 1371, 1376 (Fed. Cir. 2005); see also *TechSearch, L.L.C. v. Intel Corp.*, 286 F.3d 1360, 1369 (Fed. Cir. 2002) ("Summary judgment of noninfringement is ... appropriate where the patent owner's proof is deficient in meeting an essential part of the legal standard for infringement, because such failure will render all other facts immaterial."). Thus, summary judgment of non-infringement can only be granted if, after viewing the facts in the light most favorable to the non-movant, there is no genuine issue as to whether the accused product is covered by the claims (as construed by the court). See *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1304 (Fed. Cir. 1999).

"[A] method claim is not directly infringed by the sale of an apparatus even though it is capable of performing only the patented method. The sale of the apparatus is not a sale of the method. A method claim is directly infringed only by one practicing the patented method." *Joy Technologies, Inc. v. Flakt, Inc.*, 6 F.3d 770, 775 (Fed. Cir. 1993). Therefore, "an accused infringer must perform all the steps of the claimed method, either personally or through another acting under his direction or control." *Akamai Technologies, Inc. v. Limelight Networks, Inc.*, 692 F.3d 1301, 1307 (Fed. Cir. 2012).

With respect to apparatus claims, "to infringe a claim that recites capability and not actual operation, an accused device 'need only be capable of operating in the described mode.'" *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1204 (Fed. Cir. 2010) (citing *Intel Corp. v. U.S. Int'l Trade Comm'n*, 946 F.2d 821, 832 (Fed. Cir. 1991)). However, if an apparatus claim requires "software [to] be configured in a particular way to infringe," infringement does not occur merely because the apparatus could be used in an infringing fashion. *Finjan*, 626 F.3d at 1204-05.

### **C. Anticipation**

#### **1. 35 U.S.C. § 102(b)**

Under 35 U.S.C. § 102(b), "[a] person shall be entitled to a patent unless the invention was patented or described in a printed publication in this or a foreign country . . . more than one year prior to the date of the application for patent in the United States." The Federal Circuit has stated that "[t]here must be no difference between the claimed invention and the referenced disclosure, as viewed by a person of ordinary skill

in the field of the invention." *Scripps Clinic & Research Found. v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991). In determining whether a patented invention is explicitly anticipated, the claims are read in the context of the patent specification in which they arise and in which the invention is described. *Glaverbel Societe Anonyme v. Northlake Mktg. & Supply, Inc.*, 45 F.3d 1550, 1554 (Fed. Cir. 1995). The prosecution history and the prior art may be consulted if needed to impart clarity or to avoid ambiguity in ascertaining whether the invention is novel or was previously known in the art. *Id.* The prior art need not be *ipsissimis verbis* (i.e., use identical words as those recited in the claims) to be anticipating. *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716 (Fed. Cir. 1984).

A prior art reference may anticipate without explicitly disclosing a feature of the claimed invention if that missing characteristic is inherently present in the single anticipating reference. *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991). The Federal Circuit has explained that an inherent limitation is one that is necessarily present and not one that may be established by probabilities or possibilities. *Id.* That is, "[t]he mere fact that a certain thing may result from a given set of circumstances is not sufficient." *Id.* The Federal Circuit also has observed that "[i]nherency operates to anticipate entire inventions as well as single limitations within an invention." *Schering Corp. v. Geneva Pharms. Inc.*, 339 F.3d 1373, 1380 (Fed. Cir. 2003). Moreover, recognition of an inherent limitation by a person of ordinary skill in the art before the critical date is not required to establish inherent anticipation. *Id.* at 1377.

An anticipation inquiry involves two steps. First, the court must construe the



claims of the patent in suit as a matter of law. *Key Pharms. v. Hercon Labs Corp.*, 161 F.3d 709, 714 (Fed. Cir. 1998). Second, the finder of fact must compare the construed claims against the prior art. *Id.* A finding of anticipation will invalidate the patent. *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 147 F.3d 1374, 1378 (Fed. Cir. 1998).

## **2. 35 U.S.C. § 102(e)**

Under 35 U.S.C. § 102(e), a patent application may be prior art. That section provides:

A person shall be entitled to a patent unless an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent ... or a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent....

35 U.S.C. § 102(e) (2006). To determine whether a patent application is prior art under § 102(e), it is necessary to determine the patentee's date of invention. A party asserting prior invention may establish that he was the first to invent by showing that he was either: (1) the first to reduce the invention to practice; or (2) the first to conceive the invention and to then exercise reasonable diligence in attempting to reduce the invention to practice from a date just prior to the applicant's conception to the date of his reduction to practice. See *Union Carbide Chems. & Plastics Tech. Corp. v. Shell Oil Co.*, 308 F.3d 1167, 1189 (Fed. Cir. 2002). Reduction to practice may occur actually or constructively. Actual reduction to practice requires a showing by the inventor that "the invention is suitable for its intended purpose." *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1578 (Fed. Cir. 1996). Constructive reduction to practice, in contrast, occurs when a party alleging prior invention files a patent application on the claimed invention.

*Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1376 (Fed. Cir. 1986).

With respect to showing prior invention by conception and diligence, the inventor who was first to conceive but last to reduce to practice will prevail if he was "diligent" in reducing the invention to practice. See 35 U.S.C. § 102(g) ("In determining priority of invention ... there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was the first to conceive and last to reduce to practice, from a time prior to conception by the other."). As recognized by the Federal Circuit,

[a] principal purpose of § 102(g) is to ensure that a patent is awarded to a first inventor. However, it also encourages prompt public disclosure of an invention by penalizing the unexcused delay or failure of a first inventor to share the "benefit of the knowledge of [the] invention" with the public after the invention has been completed.

*Checkpoint Sys. v. United States Int'l Trade Comm'n*, 54 F.3d 756, 761 (Fed. Cir. 1995) (citing *Paulik v. Rizkalla*, 760 F.2d 1270, 1280 (Fed. Cir. 1985)).

Conception is the "formation in the inventor's mind of a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice." *Hybritech*, 802 F.2d at 1376 (citations omitted). A conception must encompass all limitations of the claimed invention, and "is complete only when the idea is so clearly defined in the inventor's mind that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation." *Singh v. Brake*, 317 F.3d 1334, 1340 (Fed. Cir. 2003) (citations omitted). Put differently, every limitation must be shown to have been known to the inventor at the time the invention is alleged to have been conceived. *Davis v. Reddy*, 620 F.2d 885, 889 (C.C.P.A.1980)

(citing *Schur v. Muller*, 54 C.C.P.A. 1095, 372 F.2d 546, 551 (1967); *Anderson v. Anderson*, 403 F.Supp. 834, 846 (D.D.C.1975)).

Because conception is a mental act, "it must be proven by evidence showing what the inventor has disclosed to others and what that disclosure means to one of ordinary skill in the art." *In re Jolley*, 308 F.3d 1317, 1321 (Fed. Cir. 2002) (quoting *Spero v. Ringold*, 54 C.C.P.A. 1407, 377 F.2d 652, 660 (1967)). Corroboration by independent evidence is required where a party seeks to show conception through oral testimony of an inventor. *See id.* (citing *Price v. Symsek*, 988 F.2d 1187, 1190 (Fed. Cir. 1993)). "This requirement arose out of a concern that inventors testifying in patent infringement cases would be tempted to remember facts favorable to their case by the lure of protecting their patent or defeating another's patent." *Id.* (citing *Eibel Process Co. v. Minnesota & Ontario Paper Co.*, 261 U.S. 45, 60, 43 S.Ct. 322, 67 L.Ed. 523 (1923)). The Federal Circuit has opined that a court should apply the "rule of reason" in assessing corroboration of oral testimony. *Loral Fairchild Corp. v. Matsushita Elec.*, 266 F.3d 1358, 1363 (Fed. Cir. 2001); *Mahurkar*, 79 F.3d at 1577. That is, "[a]n evaluation of all pertinent evidence must be made so that a sound determination of the credibility of the inventor's story may be reached." *Mahurkar*, 79 F.3d at 1577 (internal quotation marks omitted) (quoting *Price*, 988 F.2d at 1195).

The party alleging prior invention must also be able to show diligence "from a date just prior to the other party's conception to ... [the date of] reduction to practice [by the party first to conceive]." *Monsanto Co. v. Mycogen Plant Sci., Inc.*, 261 F.3d 1356, 1369 (Fed. Cir. 2001); *Mahurkar*, 79 F.3d at 1577. There is no rule requiring a specific

type of activity in determining whether the applicant was reasonably diligent in proceeding toward an actual or constructive reduction to practice from the date of conception. See *Brown v. Barbacid*, 436 F.3d 1376, 1380 (Fed. Cir. 2006) ("Unlike the legal rigor of conception and reduction to practice, diligence and its corroboration may be shown by a variety of activities . . ."). It is also not necessary for a party alleging prior invention to drop all other work and concentrate solely on the particular invention involved. *Rines v. Morgan*, 45 C.C.P.A. 743, 250 F.2d 365, 369 (1957). There need not be evidence of activity on every single day if a satisfactory explanation is evidenced. *Monsanto*, 261 F.3d at 1369 (citations omitted).

"Priority of invention and its constituent issues of conception and reduction to practice are questions of law predicated on subsidiary factual findings." *Singh v. Brake*, 317 F.3d 1334, 1340 (Fed. Cir. 2003). The patentee has the burden of production in antedating a reference. However, because a patent is presumed valid, the party challenging validity bears the burden of persuasion, by clear and convincing evidence, that the invention fails to meet the requirements of patentability. See *Stamps.com Inc. v. Endicia, Inc.*, 437 Fed. Appx. 897, 907–08 (Fed. Cir. 2011) (citing *Mahurkar*, 79 F.3d at 1577–78); see also *Apotex USA, Inc. v. Merck & Co., Inc.*, 254 F.3d 1031, 1037 (Fed. Cir. 2001).

### **III. DISCUSSION**

The only patent subject to review in this summary judgment practice is the '719 patent. The '719 patent, entitled "Hybrid Memory Management," issued on November 15, 2011 and claims priority to a May 28, 2008 filing date. The '719 patent is directed to

"[m]ethods and apparatuses for managing data storage in hybrid memory devices."  
(719 patent, Abstract) Flash memory may be designed using single level cells ("SLC"), which store only a single bit of information per cell, and multi-level cells ("MLC"), which permit the storage of two or more bits per cell. The "density" of a memory cell describes the amount of data that the cell can store. For example, SLCs are lower density than MLCs, and MLCs that store fewer bits per cell are lower density than MLCs that store a larger number of bits per cell. The decision to use lower or higher density cells involves trade-offs between storage size, performance, and reliability. The '719 patent relates to a hybrid memory device that uses both SLC and MLC memory cells to take advantage of preferred operating characteristics associated with each type of memory.

Round Rock asserts independent claims 1 and 28 and dependent claims 2, 9, 13 and 31 of the '719 patent. Claims 1 and 28 are reproduced below:

1. A method for managing data stored on a memory device comprising a first array of memory cells each memory cell having a first density and a second array of memory cells each memory cell having a second density, comprising:  
  
determining usage associated with a logical address of the memory device;  
  
at least partially based on the usage, storing data associated with the logical address in one of the first array and second array of memory cells; and  
  
maintaining at least a particular number of spare locations in the first array of memory cells if locations are available in the second array of memory cells by moving data from the first array of memory cells to the second array of memory cells.

...

28. A memory device comprising:

a first array of memory cells each memory cell having a first density;

a second array of memory cells each memory cell having a second density; and

control circuitry, wherein the control circuitry is configured to determine usage data of a logical address in the memory device and store data associated with the logical address in one of the first array and second array of memory cells at least partially based on the usage and wherein the control circuitry is further configured to maintain at least a particular number of spare locations in the first array of memory cells if locations are available in the second array of memory cells by moving data from the first array of memory cells to the second array of memory cells.

('719 patent, col. 11:34-14:25)

#### **A. SanDisk's Motion of Non-Infringement**

SanDisk moves for partial summary judgment of non-infringement, arguing that accused SanDisk products with G5 or Gen7 architectures do not infringe the asserted claims of the '719 patent because the products do not satisfy the limitation of "determining usage associated with a logical address" / "to determine usage data of a logical address."<sup>4</sup> The court construed this limitation as "[d]etermining [to determine] the number of actual or predicted operations performed on, or the time at which the operations are performed on, a logical address." (D.I. 172 at 4)

SanDisk's expert opined that the accused products do not practice the limitation as construed by the court because the products use data size, not "predicted operations," to determine whether the data is stored in SLC or MLC memory. (D.I. 287,

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<sup>4</sup>This limitation appears in independent claims 1 and 28 of the '719 patent.

ex. 10 at 121, 137) Round Rock's expert conceded that the product source code does not measure size in order to determine usage. (D.I. 287, ex. 12 at 182:20-183:15)

Round Rock argues that it is irrelevant that its expert did not identify the exact claim language in the source code of the accused products. (D.I. 306 at 35) What is relevant, Round Rock contends, is that its expert concluded that the accused products "determin[e] the number of . . . predicted operations performed on . . . a logical address" after examining the source code, documents and testimony. (D.I. 308, ex. 3 at I-1 to I-88) For example, Round Rock points to a Gen 7 architecture overview document considered by its expert that explains that "data write length" is used to predict whether data will be "hot" (with a small number of actual or predicted operations) or "cold" (with a large number of actual or predicted operations). (D.I. 307, ex. 48 at SAN000321609; ex. 46 at SAN00326999)

The parties' experts dispute whether the accused products practice the limitation of "determining usage associated with a logical address" / "to determine usage data of a logical address," thus creating a genuine issue of material fact. The court is unpersuaded by SanDisk's argument that only direct evidence of a calculation of actual or predicted operations in the source code is sufficient for a finding of infringement. Whether the accused products ultimately use the number of actual or predicted operations to determine where data is stored is a question properly left to the jury. Accordingly, the court denies SanDisk's motion for partial summary judgment of non-infringement of the '719 patent.

## **B. Round Rock's Motion of No Anticipation**

Round Rock moves for summary judgment of no anticipation of claims 1, 2, 9,

13, 28 and 31 of the '719 patent by U.S. Patent No. 6,456,528 to Jian Chen ("Chen"), titled "Selective Operation of a Multi-State Non-Volatile Memory System in a Binary Mode," or U.S. Patent No. 5,930,167 to Douglas Lee ("Lee"), titled "Multi-State Non-Volatile Flash Memory Capable of Being Its Own Two State Write Cache." SanDisk contends that all of the limitations of the asserted claims are disclosed by Chen and Lee with the exception of: (1) "stor[ing] data associated with the logical address;" and (2) "determining usage" of the logical address.<sup>5</sup> SanDisk argues that both references disclose the missing material through incorporation by reference of various other patents.

In this regard, SanDisk argues that the "stor[ing] data associated with the logical address" limitation is disclosed by Chen through incorporation "in [its] entirety" of Lee. (D.I. 287, ex. 3, col. 2:3-6) SanDisk's expert, Dr. Jacob Baker ("Baker"), opined that Lee discloses moving data from SLC to MLC memory blocks. (D.I. 305, ex. G, ¶¶ 285-86) However, as Baker admitted, Lee does not disclose storing data in either SLC or MLC; rather, Lee discloses storing all data in SLC regardless of usage. (D.I. 282, ex. 2 at 171:17-172:11; 173:4-19) Therefore, to fully anticipate the asserted claims, SanDisk looks to Lee's incorporation of yet another reference, U.S. Patent No. 5,297,148 to Harari ("Harari '148"). Baker opined that Harari discloses "cache management such

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<sup>5</sup>SanDisk asserts that Chen and Lee alone satisfy these limitations (D.I. 304 at 14 n.11), but this position is contrary to admissions by its expert (D.I. 282, ex. 2 at 170:14-172:11 (admitting that Lee, without the "incorporated components," fails to disclose the limitations)), and is not supported by his invalidity report (D.I. 305, ex. G at ¶¶ 233, 240) (opining that Chen discloses changing a particular physical block from MLC to SLC when that block received more writes than others, but relying on incorporation by reference for the disclosure of logical addresses).



that infrequently used files are stored in the cache memory." (D.I. 305, ex. G, ¶ 292)  
Altogether, Baker relies on the combination of Chen, Lee and Harari '148 for a complete disclosure of the "stor[ing] data associated with the logical address" limitation. (*Id.* at ¶ 292)

Proving a patent invalid by anticipation "requires that the four corners of a single, prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation." *Advanced Display Sys. Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000) (citations omitted).

Material not explicitly contained in the single, prior art document may still be considered for purposes of anticipation if that material is incorporated by reference into the document. Incorporation by reference provides a method for integrating material from various documents into a host document . . . by citing such material in a manner that makes clear that the material is effectively part of the host document as if it were explicitly contained therein.

*Id.* (citations omitted). Incorporation by reference requires a statement "clearly identifying the subject matter which is incorporated and where it is to be found." *In re Seversky*, 474 F.2d 671, 674 (C.C.P.A. 1973). "[A] mere reference to another application, or patent, or publication is not an incorporation of anything contained therein. . . ." *Id.*

Put another way, the host document "must cite the material in a manner that makes clear that it is effectively part of the host document as if it were explicitly contained therein." *Advanced Display Sys.*, 212 F.2d at 1282. It must, therefore, both (1) "identify with detailed particularity what specific material it incorporates"; and (2)

"clearly indicate where that material is found in the various documents." *Id.* (citations omitted). While anticipation is a question of fact, the question of whether and to what extent material has been incorporated by reference into a host document is a question of law. *Id.* at 1283. "[T]he standard of one reasonably skilled in the art should be used to determine whether the host document describes the material to be incorporated by reference with sufficient particularity." *Id.*

In the instant case, Chen provides the following context for the incorporation of Lee:

[Lee] describes methods of selectively programming portions of a multi-state memory as cache memory, in only two states or with a reduced margin, in order to shorten the time necessary to initially program the data. This data is later read and re-programmed into the memory in more than two states, or with an increased margin.

(D.I. 287, ex. 3 at col. 2:9-15) The missing portion of the claim limitation supposedly supplied by Lee is the ability to store data in either SLC or MLC based on the use of a logical address. SanDisk's own expert admitted that Lee, on its own, does not disclose this information. (See D.I. 282, ex. 2 at 171:17-172:11; 173:4-19) Because Lee does not disclose the information it purportedly incorporates, Chen's reference to Lee is incapable of identifying "with detailed particularity what specific material it incorporates" or clearly indicating "where that material is found." See *Advanced Display Sys.*, 212 F.2d at 1282.

Lee describes the incorporation of Harari '148 as providing "background and implementation details of such a memory system in which the various aspects of the present invention may be included." (D.I. 305, ex. E at col. 4:23-27) Lee's incorporation of general "background" and "implementation details" falls short of

identifying "with detailed particularity" specific material regarding cache management where infrequently used files are stored in the cache memory. Nor does Lee indicate "where the material is found" in the referenced document. The court, therefore, finds that Lee's incorporation of information regarding cache management from Harari '148 is legally insufficient.

Proving invalidity through anticipation is a disciplined process that requires showing "that the four corners of a single, prior art document describe every element of the claimed invention." *Advanced Display Sys. Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000) Allowing incorporation by reference for purposes of anticipation in the manner attempted by SanDisk would be contrary to the court's understanding of accepted litigation practice. Because the court finds that neither Chen nor Lee anticipates the claim limitation of "stor[ing] data associated with [a] logical address," a limitation present in both asserted independent claims, the court does not consider the sufficiency of the incorporation of the remaining limitations. Accordingly, the court grants Round Rock's motion for summary judgment of no anticipation of claims 1, 2, 9, 13, 28 and 31 by Chen and Lee.<sup>6</sup>

### **C. SanDisk's Motion of Invalidity under 35 U.S.C. § 102(e)**

SanDisk contends that claims 1, 2, 9, 13 and 28 of the '719 patent are

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<sup>6</sup>In its motion for summary judgment of no anticipation of claim 31 of the '719 patent, Round Rock argued that SanDisk's expert's report "contains conflicting allegations concerning whether or not [Oh] anticipates claim 31 of the '719 patent by disclosing wear leveling." (D.I. 287 at 31) SanDisk responded that it does not contend that Oh anticipates claim 31 of the '719 patent. (D.I. 304 at 1 n.1) Instead, SanDisk contends "that asserted claim 31 of the '719 patent is obvious in view of Oh." *Id.* Therefore, the court grants Round Rock's motion for summary judgment of no anticipation of claim 31 of the '719 patent by Oh.

anticipated under 35 U.S.C. § 102(e) by U.S. Patent Application 2009/0049234 to Moon-wook Oh ("Oh"), titled "Solid State Memory (SSM), Computer System Including an SSM, and Method of Operating an SSM," with an August 14, 2007 filing date. The parties dispute whether the '719 patent is entitled to a priority date that pre-dates Oh.

Round Rock asserts conception on February 26, 2007 based on a presentation authored by inventors William Radke ("Radke") and Michael Murray ("Murray") ("the February 2007 presentation"). (D.I. 287, ex. 31 at AA550) Additionally, Round Rock asserts constructive reduction to practice on May 28, 2008, the filing date of the '719 patent. SanDisk does not dispute the sufficiency of Round Rock's evidence of conception or constructive reduction to practice. Rather, SanDisk alleges that Round Rock has offered insufficient proof of diligence.

With respect to evidence of diligence to physically reduce the invention to practice, inventor Murray testified that the Chateau project was his primary focus during the 2007 and 2008 time periods. (D.I. 303 at ¶¶ 8-11; see *also* D.I. 287, ex. 8 at ¶ 116) Inventor Radke also testified that he continued to work on the idea behind the '719 invention after 2007. (D.I. 302, ex. 19 at 38:3-10) There is no corroborating evidence to buttress this testimony. On its own, testimony regarding diligence from the named inventors of the asserted patent lacks sufficient corroboration to support a finding of diligence. *Price v. Symsek*, 988 F.2d 1187, 1196 (Fed. Cir. 1993) ("As with the conception element . . . corroboration is required to support [the inventor's] testimony regarding communication and reasonable diligence.").

With respect to evidence of diligence through prosecution of the '719 patent, inventor Radke testified that he began working on filing the patent application "around

February of 2007." (D.I. 301 at 34; D.I. 302, ex. 19 at 42:6-9) Inventor Murray testified that the February 2007 presentation was provided to the Micron legal department within a few weeks of when it was drafted. (D.I. 301 at 34; D.I. 303 at ¶ 7) Finally, Thomas Leffert, the prosecuting attorney of record for the '719 patent, has testified that he and other lawyers at his firm worked diligently to draft the '719 patent application, completing the initial draft on December 14, 2007 and sending it to Micron and the inventors that same day. (D.I. 301 at 35; D.I. 297, ex. 12 at ¶ 6) According to attorney Leffert, over the intervening months between January 16, 2008 (the day before the Oh application was filed) and the '719 patent's May 28, 2008 filing date, he and four other members of his law firm created and exchanged three more drafts with Micron and the inventors. (D.I. 301 at 35; D.I. 297, ex. 12 at ¶ 7) In support of his testimony, attorney Leffert disclosed a "document management software printout" which describes, inter alia: (1) "1st Draft Letter to Micron" authored by "RFOLEY" and "last updated" on "12/14/2007;" (2) "Second Draft Letter" authored by "RFOLEY" and "last updated" on February 13, 2008;" (3) "Third Draft Letter" authored by "RFOLEY" and "last updated" on April 10, 2008; and (4) "Final Draft Letter to Inventors" authored by "RFOLEY" and "last updated" on April 29, 2008. (D.I. 339, ex. 2) The only corroborating evidence of when any draft of the patent application was actually sent to an intended recipient<sup>7</sup> is the December 14, 2007 cover letter to the inventors. (D.I. 339, ex. 3) None of the remaining documents identified in the printout (i.e., neither the cover letters nor the

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<sup>7</sup>Only two of the four "draft letters" identified a recipient.

draft applications) has been produced.<sup>8</sup> (D.I. 339, ex. 2)

SanDisk contends that the Leffert declaration (D.I. 297, ex. 12), submitted in October 2014, should be stricken as being offered untimely in the context of the discovery process at bar, to wit: Early in the case, SanDisk identified the Oh reference as invalidating prior art; attorney Leffert (as the prosecuting attorney) was identified as a person with knowledge. Round Rock, however, did not disclose either its present theory of diligence through patent prosecution or the evidence now at issue in any of its four responses to SanDisk's interrogatory regarding the '719 patent's priority date. Likewise, in response to a subpoena, Micron neither produced the drafts of the '719 patent applications referenced in the Leffert declaration nor even listed any such drafts on a privilege log. The first time Round Rock disclosed its theory of constructive reduction to practice through patent prosecution (and identified the evidence upon which it intended to rely) was the Leffert declaration submitted in connection with the summary judgment motion practice.

The court acknowledges that, normally, any potential trial witness who has been identified (but not deposed) during fact discovery may be deposed prior to trial and serve as a trial witness. Consistent with Round Rock's objections to SanDisk's trial witness Camelia Shamshoum ("Shamshoum"),<sup>9</sup> the opportunity to depose potential trial

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<sup>8</sup>Some of the documents are listed on Round Rock's privilege log; some apparently no longer exist (perhaps because attorney Leffert's law firm no longer exists).

<sup>9</sup>Ms. Shamshoum was identified as a trial witness regarding U.S. Patent Nos. 6,728,798 and 6,948,041, which patents were tried to verdict from January 20 to January 27, 2015.

witnesses was never meant to supplant a party's obligation to sufficiently identify its contentions for substantial vetting during fact discovery. Like the Shamsoum dispute, where SanDisk was attempting to substantively revise its defenses through the trial witness deposition procedure, Round Rock is proffering through attorney Leffert a legal position never identified during discovery. The court will strike the Leffert declaration as having been produced too late; the evidence to which it refers does not compel a different conclusion.<sup>10</sup> Because Round Rock lacks corroborating evidence of diligence to establish an earlier priority date, Oh qualifies as a valid 35 U.S.C. § 102(e) reference.<sup>11</sup>

SanDisk presents the following arguments regarding anticipation of claims 1, 2, 9, 13 and 28 of the '719 patent by Oh. For independent claim 1, SanDisk contends that: (1) Oh discloses a "method for managing data stored on a memory device" as described by the preamble to claim 1 (D.I. 287, ex. 4 at fig. 1, fig. 6); and (2) Oh discloses the "determining usage" limitation by describing how to classify data based on how frequently it is written (*Id.* at ¶¶ 0036, 0048, 0056, 0058). SanDisk argues the limitation "at least partially based on usage, storing data" is disclosed in that Oh discusses storing data in either a low-density array or a high-density array based on usage. (*See id.* at ¶ 0037) Finally, SanDisk argues that Oh discloses the "maintaining at least a particular number of spare locations" limitation by describing migration of

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<sup>10</sup>As noted, the documents that could corroborate the inventors' testimony have never been produced, nor other witnesses identified in a timely fashion (such as the other members of the now-defunct law firm).

<sup>11</sup>As the court finds inventor Murray's testimony to be insufficient to establish diligence, SanDisk's arguments regarding the admissibility of said testimony (D.I. 286 at 21-22) are not presently addressed.

"cold" data from low to high density memory. (*Id.* at ¶¶ 0038, 0040) SanDisk also identifies disclosures in Oh that allegedly anticipate dependent claim 2 (*see id.* at fig. 1), dependent claim 9 (*see id.* at ¶ 0032), and dependent claim 13 (*see id.* at ¶ 0011).

Independent claim 28 shares several overlapping limitations with claim 1 including "determining usage" and "at least partially based on usage," and SanDisk advances the same anticipation arguments for claim 28 as for claim 1. Claim 28 also contains a "control circuitry" limitation, which SanDisk argues is disclosed in the form of the "memory controller" in Oh. (*Id.* at ¶ 0012)

Round Rock did not present a substantive rebuttal to SanDisk's anticipation arguments, instead relying on its position that Oh is not a valid prior art reference. As such, Round Rock failed to identify a genuine dispute as to any material fact regarding anticipation by Oh. The court, therefore, awards SanDisk summary judgment of invalidity of claims 1, 2, 9, 13 and 28 of the '719 patent.

#### **IV. CONCLUSION**

For the foregoing reasons, the court denies SanDisk's motion for partial summary judgment of non-infringement of the '719 patent (D.I. 283), grants Round Rock's motion for summary judgment that claims 1, 2, 9, 13, 28 and 31 of the '719 patent are not anticipated by U.S. Patent No. 6,456,528 to Chen or U.S. Patent No. 5,930,167 to Lee et al (D.I. 280), grants SanDisk's motion for partial summary judgment that claims 1, 2, 9, 13 and 28 of U.S. Patent No. 8,060,719 are invalid as anticipated by U.S. Patent App. Pub. No. 2009/0049234 to Oh et al. ("Oh") (D.I. 285), and grants Round Rock's motion for summary judgment that claim 31 of the '719 patent is not anticipated by Oh (D.I. 280). An appropriate order shall issue.